

Gabriel Andral (1797–1876) and the first reports of lymphangitis carcinomatosa

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Gabriel Andral was one of the outstanding French physicians, in the first half of the 19th century. This article draws attention, first, to some aspects of his career as physician and medical writer, and secondly, to the first accounts of lymphangitis carcinomatosa.

Andral was born in Paris, 1797. His father served as Médecin Militaire, and later, in Italy, as personal physician to Murat¹. It was here that Gabriel Andral spent part of his childhood; he returned to Paris in 1813. Then, he attended the Lycée Louis-le-Grand for two years. In 1815, he entered La Faculté de Médecine, Paris. In 1818¹, he had a crucial meeting and discussion with M. Lermnier, at one particular postmortem examination: 'Ce jour décida de ma vie.' Rising daily at 0500 h and with great single-mindedness and diligence, Andral set about recording and collating his own succinct observations, made, both on patients in the hospital wards, and at the subsequent postmortem examinations, on many of these cases. This amassed material was the source of his first major publication: *Clinique médicale ou choix d'observations recueillies à la clinique de M. Lermnier*².

Andral passed his thèse, in 1821. In 1824, after a brilliant examination, he was appointed Agrégé à la Faculté de Médecine; at the same time, four others (one of whom was Jean Cruveilhier) were appointed to the same status. Subsequent volumes of *Clinique médicale* appeared in 1824, 1826 and 1827. In general, the four volumes comprised clear, precise, clinical case reports, relevant postmortem findings and a summary on most of these cases; also, there were general reviews on the medical conditions recorded in the same volume. In a 'condensed form', a later edition of these volumes was translated into English by Spillan (1836)³. Andral was appointed Professeur Titulaire de la Chaire d'Hygiène, 1828. Another major work, *Précis d'anatomie pathologique*, was published, in three volumes in 1829⁴. These were soon translated into English, in two volumes, by Townsend and West from Dublin⁵. Townsend, in the translator's preface to volume 2, revealed a contemporary view of Andral's renown. Having pointed out the great need for a comprehensive treatise on pathological anatomy, he wrote '... for this arduous task few persons could be better qualified than Professor Andral: placed by acclamation at the head of the Pathologists of the French school, he may be considered as the chosen organ of that body, and consequently as expressing the present state of the science in that country. He has himself made, perhaps, a greater number of postmortem examinations than any other pathologist in Europe; accordingly, his work is unrivalled in the number of original observations it contains ...'. A sequel to *Précis d'anatomie pathologique*, *Cours de pathologie interne*, was published in 1836⁶.

Honorary Members.

ELECTED 15th APRIL, 1847.

- G. ANDRAL, M.D., Professor in the Faculty of Medicine; Consulting Physician to the King, Paris.
J. C. CRUVEILHIER, Professor in the Faculty of Medicine, Paris.
JULIUS VOGEL, M.D., Professor of Clinical Medicine in the University of Giessen.
ROBERT CARSWELL, M.D., Physician to his Majesty the King of the Belgians, Brussels.
WILLIAM PULTENEY ALISON, M.D., F.R.S., Professor of Medicine in the University of Edinburgh.
WILLIAM STOKES, M.D., Regius Professor of Physic in the University of Dublin.
A. W. OTTO, M.D., Professor of Medicine in the University of Copenhagen.
J. HENLE, Professor of Anatomy and Physiology in the University of Zurich.
C. ROKITANSKY, M.D., Professor of Pathological Anatomy in the University of Vienna.

Figure 1. Reproduced from page 8 of the transactions of the Pathological Society of London, 1848, volume 1

It was during these years of his most productive medical writing that Andral received many honours, both in France and abroad; some of these are recorded on the title page of tome V, 2nd edition of *Clinique médicale*⁷: Titulaire de l'Académie Royale de Médecine, membre des Sociétés de Médecine de Bogota, d'Édimbourg, de Liège, de Naples, de la Nouvelle-Orléans, Médecin consultant du roi, chevalier de la Légion-d'Honneur, etc. The Pathological Society of London (Instituted 1846), by its bye-laws and regulations, was enabled to elect to Honorary membership 'persons of distinction in Medicine and the collateral sciences'⁸. In the first such election, 1847, the list of illustrious names was headed by Andral's (Figure 1).

Following the death of Broussais, Andral succeeded to La Chaire de Pathologie et de thérapeutique générales, 1839. The important *Essai d'hématologie pathologique*⁹ was published in 1843; it was translated into English by Meigs and Stillé and published in Philadelphia in 1844¹⁰.

Dreyfus¹¹ in 1963 discussed this essay and quoted extensively from the original; one extract revealed Andral's prescience about clinical haematology: 'L'hématologie pathologique ne commencera à s'enrichir de faits de quelque valeur que lorsque le sang d'un grand nombre de malades aura été soumis à l'investigation chimique et examiné au microscope ...'.

Béclard¹ epitomized well Andral's rapid rise to fame: 'En 1824 ... [quand] M. Andral était nommé agrégé à la Faculté de Médecine ... La plupart de ses condisciples étaient encore sur les bancs et déjà M. Andral comptait les maîtres: il ne tardera guère à compter parmi les premiers.'

Notwithstanding his huge success, Andral was bitterly assailed by Broussais, an older physician and

a solidiste (one who referred all diseases to morbid changes in solid parts of the body).

Broussais berated Andral for 'humorisme' and 'éclectisme', however, Andral asserted that the distinction between 'solidisme' and 'humorisme' in clinical medicine, was of little importance.

Broussais had propounded La Médecine Physiologique. The cardinal point of this system was a belief that irritation or inflammation in the digestive system was responsible for many ills. For these, watery beverages, the application of leeches and blood-lettings were prescribed.

Dreyfus quoted Dupin (1836)¹¹: 'L'emploi de sangsues, depuis la promulgation des idées de M. Broussais, s'est étendu prodigieusement. Quelques années ont suffi pour épuiser les marais de France et d'Angleterre, puis ceux de l'Allemagne et de la Hongrie . . .'

Andral's approach to medical science was one indeed of eclecticism: he stated it clearly: C'est l'éclectisme qui, lorsqu'une idée dominante ruinée par les doutes, sapée par les investigations, ébranlée par la critique, s'est écroulée enfin sous les coups, c'est l'éclectisme enfin dis-je qui, après avoir renversé et détruit, relève et reconstruit la science. Il recueille les débris du passé et, choisissant parmi eux, ceux que les siècles n'ont pu détruire, mais que lesquels ils ont passé en leur communiquant un degré, de plus de grandeur, de solidité, de résistance, il les cimente et sur cette base plus ferme eleve un nouvel édifice . . .'

Andral's essay on haematology was his last major original work. Dreyfus wrote 'Il a 46 ans. Il gardera dorénavant le silence et se tient à l'écart du mouvement médical. Cette retraite volontaire étonna tout le monde . . . ' and then quoted Grousset: 'M. Andral a voulu graver un sommet trop élevé pour ses forces. Arrivé jusqu'au faite, il a été pris de vertige et il s'est cassé les reins dans le précipice.'

This dramatic turn in Andral's career gave rise to speculation. It was felt that his wife's ill-health and his son's tuberculosis may not have been the root causes of his retreat from medicine. Some considered that he had become uncertain and perhaps disillusioned, with medical science and practice. However, he did continue to have a great interest in the history of medicine. In 1856, Andral resigned his chair. He died in 1876.

Andral is rightly credited with the first account of lymphangitis carcinomatosa. From Cruveilhier's time (1852)¹² until the present, the reference given is from Andral's 1829 *Précis d'anatomie pathologique*¹³. However, Andral had two earlier versions of this case: the first was published in *Archives de médecine* (1824)¹⁴, in a report entitled: *Recherches pour servir à la histoire des maladies du système lymphatique*; the second, in tome II, *Clinique médicale* (1826)¹⁵.

The earlier account (1824) opens: 'Une femme atteinte d'un cancer utérin, mourut à la Charité dans les cours du mois d'août 1824. Les ganglions du mésentère et ceux de l'excavation du bassin formaient au-devant de la colonne vertébrale d'énormes masses cancéreuses. Les ganglions de l'aîne et ceux qui entourent les bronches avant leur entrée dans le poumon, étaient également cancéreux les uns en partie, les autres en totalité . . . la surface externe des deux poumons était parcourue par un grand nombre de stries blanches, entièrement semblables par leur disposition à des vaisseaux lymphatiques pleins de mercure. Ces stries étaient effectivement des

vaisseaux que remplissait la même matière que nous venions de trouver dans d'autres lymphatiques et dans le canal thoracique. On en suivait facilement plusieurs jusqu'aux ganglions bronchiques dégénérés en cancer. L'intérieur des deux poumons, et surtout du gauche, contenait également plusieurs de ces vaisseaux, semblables à des filets blancs, renflés par intervalle. Tantôt on les y trouvait isolés; tantôt agglomérés en quantité plus ou moins grande, ils représentaient des espèces de plexus. D'Ailleurs, en aucun point des poumons on ne trouva rien qui ressemblât à des tubercules . . .'

Andral was intrigued by 'cette matière étrangère', present in the lymphatic vessels and the thoracic duct. Notwithstanding that there had been a direct connection between these vessels and cancerous lymph glands, Andral persisted, in his accounts of this case, to consider the material as 'd'apparence tuberculeuse', and this, despite his own clear statement that, otherwise, there was no evidence of tuberculous disease in the lungs or pleurae.

Jean Cruveilhier (1791-1874), Professeur d'Anatomie Pathologique, Paris, in *Traité d'anatomie pathologique générale* (1852)¹², described the postmortem findings in a person who had died from widespread cancer: 'Ces vaisseaux lymphatiques cancéreux formaient un réseau situé sous la membrane séreuse qui était intacte . . . Les vaisseaux lymphatiques [étaient] également cancéreux qui s'enfonçaient dans l'épaisseur des poumons . . . les ganglions bronchiques étaient également cancéreux. M. Andral décrit avec détail une alteration des poumons et du canal thoracique qui paraît devoir être rapportée à l'altération cancéreuse . . . ' Andral's 1829 version of the 1824 case report on lymphangitis carcinomatosa followed on, after a case report on a woman who, too, had died from cancer of the uterus; there had been extensive spread of the cancer in the pelvis, mesentery and thoracic duct - there was no mention of pulmonary or pleural involvement. Cruveilhier quoted freely from this case report. It seems probable that he (Cruveilhier) had the lymphangitis carcinomatosa case, also in mind. ('Avec détail une altération des poumons').

The footnote is relevant to each of Andral's two case reports: 'Je ferai remarquer que, dans cette description, M. Andral ne parle nullement de matière encéphaloïde . . . ' (encephaloid, a former term for soft cancer).

Other writers, including Virchow (1855)¹⁶, Bristowe (1868)¹⁷, Troisier (1873)¹⁸, and Raynaud (1874)¹⁹ gave full case histories on cases of lymphangitis carcinomatosa. Girode (1889)²⁰ as Interne, médaille d'or des hôpitaux, in an important article referring to most of the previously recorded cases, described another (secondary to a gastric carcinoma). In a well-written analysis of mechanisms involved in the unusual distribution of the malignant tissue in lymphangitis carcinomatosa, associated with malignant disease arising in the abdomen, he propounded retrograde spread from cancerous lymph nodes at the lung hila and mediastinum, as a major one. Others had alluded to retrograde spread as a possible mechanism; but, Girode made a clear statement on this matter - 65 years after Andral's first account.

Finally, by any criterion Andral's career in medicine was exceptional:

- (i) His thrust, self confidence and unrelenting hard work which arose from one particular discussion with M. Lerminier, at a postmortem examination.

- (ii) His early, rapid rise to the very summit of French medicine.
- (iii) His extensive medical writing, based on his own observations.
- (iv) The unexpected early retreat from the medical scene.

These are just some aspects in the career of a remarkable and intriguing man.

Andral's account of the postmortem findings in a case of lymphangitis carcinomatosa, secondary to a uterine carcinoma, was clear and precise; but, his views on the nature of the change in the lymphatic vessels in the lungs and pleurae were strangely incorrect.

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